

IN THE CLAIMS:

1. (Cancel)
2. (Currently Amended) A scanning system, comprising a light source for emitting illuminating light along an illuminating light path, imaging optics for focusing the illuminating light emitted from the light source onto an object to be scanned, and an image detector to detect for detecting backscattered light off from a point on the object ~~that is backscattered from the object and that~~ passes back through said imaging optics ~~to at least two radiation sensitive sensor elements (pixel) along an observed beam path,~~ wherein the image detector comprises two sensor elements for detecting backscattered light from the object point irradiated via the imaging optics, and including

imaging optics means in the beam illuminating light path between the aperture array and the object for changing a length of an optical path therebetween (d), and

means for adjusting an accumulation of charges in the two sensor elements from light intensity of light in the observed beam path during an exposure period (T) ~~in such a manner so~~ that a correlation with the length of the optical distance (d) path of the an image plane from the imaging optics is created ~~so that~~ to enable reconstruction of an altitude coordinate (zs) of the object ~~can be reconstructed from the~~ a distribution of levels of intensity acquired from the two sensor elements during the exposure

period (T), said means altering sensitivity of said two sensor elements and/or translucence in the observed beam path between said imaging optics and said image detector.

3. (Cancel)

4. (Currently Amended) The scanning system as defined in Claim 3~~2~~, wherein ~~by means of~~ said aperture array enables a plurality of object points ~~can~~to be detected, ~~there being provided at least~~ and said image detector includes as many groups of sensor elements as there are object points to be detected.

5. (Currently Amended) The scanning system as defined in claim 4, including deflecting means in said observed beam path between said object and said ~~sensors are proposed~~ image detector for deflecting said observed beam path.

6. (Previously Presented) The scanning system as defined in Claim 5, wherein said deflecting means is a beam splitter.

7. (Currently Amended) The scanning system as defined in Claim 5, wherein said deflecting means is ~~disposed~~ positioned between said imaging optics and said light source.

8. (Currently Amended) The scanning system as defined in Claim 5, wherein said deflecting means is ~~disposed~~ positioned between said aperture array and said light source.

9. (Currently Amended) The scanning system as defined in Claim 2, including a moveable aperture which at least partially shades said sensor elements depending on the amount of movement of said aperture.

10. (Currently Amended) The scanning system as defined in Claim 9, wherein ~~said aperture is designed such that~~ movement of said aperture causes a reduction of the shading of the at least one sensor element and an increase in the shading of said at least one other sensor element.

11. (Previously Presented) The scanning system as defined in Claim 9, wherein said aperture shades, in an initial position, a part of said sensor elements completely and, in an end position, another part of said sensor elements completely and, in an intermediate position, shades both a part of certain sensor elements and a part of the other certain sensor elements.

12. (Currently Amended) The scanning system as defined in claim 11, wherein ~~the~~ a degree of shading of said part of said sensor element is complementary to ~~the~~ a degree of non-shading of the other part of said sensor element.

13. (Previously Presented) The scanning system as defined in claim 2, wherein said means consists of an electronically controlled optical element of variable translucence.

14. (Previously Presented) The scanning system as defined in claim 13, wherein said aperture array is designed for two-dimensional scanning of said object.

15. (Currently Amended) The scanning system as defined in Claim 14, ~~wherein~~including regulating means ~~are provided for adjusting the~~a position of said aperture array such that regions not imaged in a first scan due to ~~the~~ pulse duty ratio of said aperture array are imaged in a second scan.

16-21. (Cancel)

22. (Currently Amended) The scanning system as defined in claim 3, wherein an average scanning distance of said aperture array is in accord with ~~the~~a desired measuring accuracy.

23-25. (Cancel)